

## **ABSTRACT**

A camera uses a map to retrieve image data pertaining to two or more region of interest segments (ROI segments) within the field-of-view (FOV) of the camera. The map identifies selected pixels of the image located in the region of interest segments. Image data  
5 corresponding to the image can be stored and the image data associated with the selected pixels can be accessed individually. In other embodiments, image data associated with the selected pixels is read off of the image sensor row-by-row or pixel-by-pixel. The camera can be included within an optical inspection system to analyze ROI segments on a target surface by transmitting only the image data associated with the ROI segments from the camera to an  
10 image processing system of the optical inspection system.